

REMARKS

This Preliminary Amendment has been made to remove all references to Fig. 4A in the specification. No new matter has been added. Entry of the above Preliminary Amendment is respectfully requested prior to examination of this application.

If there are any questions regarding this Preliminary Amendment or this application in general, a telephone call to the undersigned would be appreciated since this would expedite the prosecution of the application for all concerned.

Respectfully submitted,



Alphonso A. Collins
Registration No. 43,559
Attorney for Applicant(s)

DARBY & DARBY
805 Third Avenue
New York, New York 10022
(212) 527-7700

EXPRESS MAIL CERTIFICATE

Date 1/4/02 Label No. EC 767721851 US

I hereby certify that, on the date indicated above, this paper or fee was deposited with the U.S. Postal Service and that it was addressed for delivery to the Assistant Commissioner for Patents, Washington, DC 20231 by "Express Mail Post Office to Addressee" service.

Name (Print)

Signature



07278

PATENT TRADEMARK OFFICE

PLEASE CHARGE ANY DEFICIENCY UP TO \$300.00
OR CREDIT ANY EXCESS IN FUTURE FEES DUE
WITH RESPECT TO THIS APPLICATION TO OUR
DEPOSIT ACCOUNT NO. 04-0100

RECEIVED
JAN 18 2002
U.S. PATENT & TRADEMARK OFFICE
TE 3108 MAIL ROOM

Docket No: 2640/1G820-US1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Eitan T. WIENER

Serial No.: 09/975,127 Art Unit: 3731

Confirmation No.: 1298

Filed: October 10, 2001 Examiner: not yet assigned

For: APPARATUS AND METHOD FOR ALERTING GENERATOR FUNCTIONS IN AN ULTRASONIC SURGICAL SYSTEM

Box Non-Fee Amendment

Assistant Commissioner for Patents
Washington, DC 20231

MARK UP OF PRELIMINARY AMENDMENT OF JANUARY 4, 2002IN THE SPECIFICATION:

Page 11, delete the forth paragraph:

[FIG. 4A is a schematic illustration of transducer drive circuitry of a power transformer 86 of FIG. 3B;]

Page 18, delete the last full paragraph and insert the following new paragraph:

[FIG. 4A is a schematic illustration of] The transducer drive circuitry of [a] power transformer 86 [of] shown in FIG. 3B[. The transducer is] may be represented by an equivalent electrical circuit [with The] having components C_o , L_s , C_s , and R_s which form a transducer equivalent circuit T_{equiv} , where C_o is a shunt capacitance and represents the electrical capacitance of the piezoelectric elements of the piezoelectric transducer 36 shown in FIG. 2.

Page 19, delete the entire page 19 and insert the following new page 19:

L_s , C_s and R_s [are] form an electrical equivalent of the overall mechanical system and collectively represent the mechanical branch. L_s is the effective mass of the system, C_s is the effective compliance and R_s represents mechanical losses associated with friction, internal material dissipation and/or the power delivered to the tissue.

An Inductor L_t is also provided and is matched to the shunt capacitance C_o at the resonance of the ultrasonic system, such as approximately 55.5 kHz. Hence, L_t and C_o electrically cancel each other at the resonant frequency. As a result, all of the drive current will flow through the mechanical branch. This helps to ensure that the ultrasonic excursion of the transducer is primarily proportional to the drive current.

[The two] Two resistors $R_p/2$ sum in series to a resistance of R_p . This resistance helps to establish an upper limit of the overall impedance of the output circuit, and also establishes an upper limit for the drive voltage. In preferred embodiments, R_p is a relatively large resistance. At resonance, the parallel combination of R_p and R_s is effectively R_s , because R_s is much smaller than R_p , even when coagulating and cutting tissue.

A [The] series combination of capacitors Cv1 and Cv2 is used to form[s] a voltage divider. Together these capacitors reduce the high voltage that typically drives the transducer to a level which is appropriate for signal processing by integrated circuits (not shown). A transformer Vt couples the reduced voltage to the feedback circuitry (voltage sense 92 of FIG. 3B) and also provides isolation between the drive circuitry and the other circuitry of the generator.

A small voltage drop is provided across [the] a series combination of resistors R3 and R4. In the preferred embodiment, the series combination is a relatively low

Page 20, delete the second full paragraph and insert the following new paragraph:

A pair of resistors R1 [and], R2 [are] is used to establish a minimum impedance level to the control circuitry for use in the control algorithms. The resistance is divided between [the] two output arms Vout1, Vout2 of the power transformer to help mitigate electromagnetic radiation and leakage current.

Respectfully submitted,



Alphonso A. Collins
Registration No. 43,559
Attorney for Applicant(s)

DARBY & DARBY
805 Third Avenue
New York, New York 10022
(212) 527-7700